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## **Late Globalization and Evolution, Episodes and Epochs of Industries**

*Evidence from Danish Textile and Fashion Industry, 1945-2015*

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## **Late Globalization and Evolution, Episodes and Epochs of Industries:**

### **Evidence from Danish Textile and Fashion Industry, 1945-2015**

**Abstract:** In this paper we explore the conceptual terrain of what we term late globalization. We follow a macro-conceptual to a micro-empirical path to explore the effects of late globalization in the context of the emergence and evolution of Danish Textile and Fashion Industry (DTFI). In this context, these interrelated issues are examined: critical events, impediments, pressures and turning points that shaped DTFI; main institutional players that motivated key policy changes in and evolution of DTFI; and effects of late globalization on size, mission, location, knowledge, growth and structure of DTFI. Historical data on DTFI between 1945 and 2015 was collected and analysed employing a number of tools such as causal mapping, critical event matrix and radar charts to display and discuss the following industry variables: size, mission, location, knowledge, growth and structure. While this is just a longitudinal one-country-and-industry case study of late globalization, it already points to a number of key factors that influence the lateness (or earliness) of globalization: government policies toward domestic and foreign players in an industry, global competition that shapes and continually reshapes (cost as well as quality-driven) location of key value chain activities (and the concomitant global distribution of core competencies and skills), and the growing role of information technologies that enable globally-dispersed value chains to function in cohesive and unified ways. Implications for future research are discussed.

**Keywords:** Late Globalization; Industrial Policy; Industry Emergence; Industry Evolution; Theory Building; Textile and Fashion; Denmark

## Introduction

While the empirical focus of this paper is the Danish Textile and Fashion Industry (DTFI) – examining meso and macro time-slices in terms of the episodes and epochs in the emergence and evolution of DTFI as well as policy makers’ intent to effect institutional change and respective outcomes – the theoretical intent is wider. We want to explore the conceptual terrain of what we term *late globalization*, a terrain that has temporal and spatial aspects along with many other dimensions. The Danish Textile and Fashion Industry (DTFI) is a late globalizer. Its specific pattern, with ups and downs, policy and technology innovations and adaptations, provides a specific window into late globalization processes; and sets a stage for further exploration of the *late globalization* phenomenon.

To get to the empirical case study, we follow a macro-conceptual to a micro-empirical path. The next section discusses the multidisciplinary and multifaceted field of late globalization. Then, since DTFI is a specific case of late globalization, we have a section on the historic-analytic approach that we employed to study DTFI. We then draw out very specific, empirically derived, conceptual themes about the patterns of global interactions that characterized the specific evolutionary trajectory of DTFI. We do return to a final macro-conceptual section on late globalization – acknowledging that the particular DTFI case study does suggest further pathways to explore late globalization. We end with some suggested future research directions for late globalization.

## Late Globalization: Conceptual Terrain

Late globalization is a relatively new phenomenon. While not using the term *late globalization* explicitly, Appadurai (1990), recognizing the five cross-national interconnecting and intermingling *scapes* – ethnoscapas, technoscapas, finanscapas, mediascapas, and ideoscapas – provided a first major window on what late globalization (in the “lifecycle of globalization” sense) looks and feels like. Literary theorist Moraru (2011) has gone a step beyond, and

introduced the term *late globalization*, in a lifecycle-of-globalization sense; implying that globalization is in a late-geriatric phase.

In contrast to economic and entrepreneurship theorists, to culture theorists, “globalization” has been happening for a very long time, even a couple of millennia, if we take the early perilous journeys of Silk Road and the seafaring merchant-adventurers, traveling perilous routes by long caravans or in very early sailing boats. “Putting on” culture theory lenses, globalization stretched over a long period, starting with early explorers phase, expanding into a long phase of merchants and explorers in Europe, and maturing in the 20th century. In this sense, globalization is now likely in a late maturity phase, with the intensity of cultural traffic at an all-time high. Such long-historical views, however, are of limited utility when nations, sectors, industries, companies, specific individual or institutional actors are grappling with practical aspects of late globalization affecting their situations, fortunes, and prospects. The DTFI case, discussed later, shows the much greater complexity of the actual late-globalizing aspects when the focus is on a country and a specific industrial sector.

There is clearly a need to push the cultural lifecycle-of-globalization concept(s) of late globalization in several other disciplinary dimensions – economic, political, sociological, and more (see also Anon for review). This paper takes a small step in this regard. It develops fine-grained, substantive details of the DTFI case that would contribute towards the development of a theory (or theories) of late globalization.

### ***Late Globalization: Multiple Senses***

*The late globalization angle is new, and it has to be developed carefully.* The act of being *late* in whatever aspect of globalization – whether it is deliberate, serendipitous, or for other reasons – often means many opportunities were grabbed by the early globalizers and thus became scarce to those who globalized late. On the other hand, late globalizers may capitalize on, benefit from opportunities created by numerous external global events.

The qualifiers *early-late* could be applied to countries or nations, functions or aspects of industries or sectors, as well as companies. The term *late* may refer to the timing of various steps/forms of internationalization and globalization. Overall, the notion late produces a number of issues or questions. Late - by whose standard or definition? In the context of DTFI, for example, is the nature of “lateness” about (a) Danish firms in general, (b) Danish firms in textiles, (c) Scandinavian firms in textiles, (d) British firms in textiles, or (e) American firms in textiles?

Alternately, switching tracks, late on what *dimension*: (a) manufacturing, (b) supply chain development, (c) market-seeking or resource-seeking? International angles bring additional early-late *combinations or intersections*: (a) Denmark late globalizer but China early globalizer; (b) Denmark late globalizer in textiles and Belarus also late globalizer (as supply source); (c) USA early globalizer in textiles and also China early globalizer (as supply base). One could explore late at what *level of analysis*: country (Denmark), industry (textiles), company (Kvadrat), process (manufacturing, R&D, marketing), strategic alliances (value chains, value locations, intellectual property issues)?

From the above, it is evident that there are several levels of analysis such as meta-theoretical, macro, meso and micro levels. At *macro (industry, nation and global)* level, timing – being late or early globalizer – raises new questions about the benefits and drawbacks of being late or early globalizer. Is timing important? Should nations pursue globalization actively, consciously or not: to globalize or not? What consequences will such decisions have? Having embraced globalization, will there be an integration into global economy? Having opposed globalization, will there be a protectionist regime installed? The perception of globalization as something positive or negative will moderate the answers to this type of questions. At the end of the day, Indeed, globalization “...is by no means wholly benign in its consequences” (Giddens, 2002). Nations like UK, France, USA and Japan globalized early, though Japan

clearly much later than others. Also, Spain and Portugal globalized too early to take advantages that became available (later) through the interaction of globalization and industrialization, something that the UK took full advantage of. In the post-World War II period internationalization of firms from the nations in the Soviet bloc was slow, as import-substituting industrialization was a key goal of Soviet and non-aligned developing nations, and globalization practically non-existent for many decades. Comparing China and India, China started these processes in 1971 and was an ‘early globalizer’ compared to India, a ‘late globalizer’ that opened the doors to outside-in forces and processes only in 1991. In the post-Brexit and Trump presidency world, the forces that take a negative view of globalization are indeed somewhat ascendant – not from the resistive, postcolonial angle but from a quixotic “aggrieved-and-miffed” imperialist angle. What if there is no (conscious) policy decision whether to globalize or not? What if, despite explicit or implicit policies to globalize or not, the opposite effect materializes inadvertently? When financial crisis started in 2008, Republic of Moldova did not ‘feel’ it due to its non-globalized economy. This made it less vulnerable to such global shocks. As a result, Republic of Moldova became the fifth most stable economy in the world (Piggott, 2009).

How late globalization affects industries – at *meso level* – is yet to be well understood. How, for example, being late or early globalizer impacts the fragmentation of value chains nationally and/or regionally, policy and organization behaviour. How it effects the relationship between internationalization and globalization. For example, local SMEs become captive to multinational enterprises (Anon for review) and eventually follow MNEs, most of the time abandoning home markets. When MNEs reconfigure their global value chains, these captive SMEs become first victims of any global value chain reconfigurations that follow. De-internationalization is an option for these SMEs (Anon for review). However, the question is whether the industries SMEs abandoned are still there and if yes, whether there is yet a room

for them. These issues are still valid when MNEs also de-internationalize by for example bringing manufacturing back home, i.e., by back-shoring. In recent years, back-shoring became a widespread phenomenon, its relevance being acknowledged by policy-makers and practitioners (United Nations, 2013). Recent empirical evidence supports this assertion, e.g., between 400 and 700 firms back-shore every year in Germany (Bals, 2015). However, in spite of such evidence, de-internationalization phenomenon is under-researched (Anon for review; Anon for review).

At meso level, the interplay between late globalization, contexts and institutions also need further research. The extant international business research focuses chiefly on the relationship between target markets' contexts and institutions and MNEs strategies. Studying only MNEs and their strategies within this scope of enquiry we conjecture limits our understanding of late globalization and its effects. As international business policy scholars, we shall study different types of organizations that might produce not only interesting, but also paradoxical findings. Consider universities. Compared to MNEs, universities are late globalizers. Many renowned universities have gone global and recently started to de-internationalize (Anon for review) primarily due to the incompatibility between university autonomy at home and in international target markets. Due to such incompatibility between institutional settings, advanced internationalization of universities via high risk, high cost and high commitment entry modes such as joint ventures, acquisitions, green or brown field investments, becomes unethical (Anon for review). It is when advanced-internationalizing universities are willing to compromise on their ideals of academic freedom and autonomy or in international business language – are willing to adapt to local environment and culture. Such behaviour of different types of late globalizers (such as universities) has an affect on internationalization and globalization policies and practices and at the same time questions the extant international business theories and models.

## ***Industries Emerging and Evolving***

How industries emerge *and* evolve, particularly in a very global world, is an enduring question that has received scant attention in academic research and needs to be further explored and studied. We emphasize ‘*and*’: traditionally the emergence of industries has been studied independently from the evolution of industries; and we advocate for a joint approach.

Van de Ven and Garud (1989) and Aldrich and Fiol (1994) made one of the first attempts to conceptualize the emergence of new industries. Van de Ven and Garud (1989) identify two levels at which the emergence of an industry could be studied: individual firm or entrepreneur level, and aggregate, system level. Van de Ven and Garud (1989) suggest exploring the motivations, purposeful intentions and business ideas of entrepreneurs and argue that the emergence of a new industry is the result of ‘...cumulative achievements of a new "community" of symbiotically related firms and actors who, through individual and collective action, invest resources in and transform a technological invention into a commercially viable business’. To the above, (Anon for review) add that the initial catalyst is a new venture that is the seed for the birth of the new industry and conjecture that unless at least one new venture achieves legitimacy threshold in a new industry there is no possibility for that industry to become institutionalized.

Aldrich and Fiol (1994) extend Van de Ven and Garud’s model suggesting that new ventures and new industries lack cognitive and socio-political legitimacy, defined respectively as knowledge about the new activity and what is needed to succeed in an industry, and as the value placed on the new activity by cultural norms and political authorities. Their model, however, does not capture the process of (co)-emergence and (co)-legitimation of new venture and new industry, and assumes the presence of emerging competition as well as of sophisticated institutional context – these gaps remain in the literature (Anon for review).

Hannan and Freeman (1977) were among the first who pioneered the study of the evolution of industries from the population-ecology perspective – advancing a population-



ecology theory of birth, survival, and death of organizations. According to Hannan and Freeman (1977; 1993), a set of general processes affect the rate of organizational population: competition within and between population for capital, members, and other limited resources; legitimation; aging, in the case of mortality; and environmental abundance and constraints. At this level, the population and not the individual firm or individual entrepreneur is the unit of analysis. That is, the population-ecology theory treats organizations as black boxes, closed to inspection of their inner workings (Bygrave & Hofer, 1991). Moreover, its probabilistic predictive power for populations has never been proven (Bygrave, 1993).

The extant research and policy papers on the evolution of Danish Textile and Fashion Industry (DTFI) focus mainly on the impact of labour and employment (Olsen, Ibsen, & Westergård-Nielsen, 2004), industrial relations (Christensen, 2010), location (EMCC, 2008), strategic marketing and current trends (Pedersen, 2008) and value chain strategies (Jensen & Poulsen, 2013) on growth, and changes in DTFI as well as on key decisions related for example to shifting or relocating production or switching to mass-production of fashion clothing or enacting protectionism or de-regulation. A series of recent studies could be highlighted that investigated the evolution and changes in various industries such as retail and hospitality industry (2010-2017) in Singapore (Cheah, Sarah; Ping Ho, Yuen; Li, Shiyu, 2018), green energy (1960-2018) in Taiwan and Korea (Young Kim, 2019), plastic industry in Brazil (Ferreira da Silva, Guevara, Santibanez Gonzalez, & Goncalves de Oliveira, 2019), mining industry (1980-2016) in Chile (Katz & Pietrobellib, 2018) and mechanical watch industry (1970-2008) in Switzerland (Raffaelli, 2018). These studies demonstrate that in volatile global and local economic and political environments, it is critical *inter alia* to develop and implement appropriate and timely policy instruments to support continuous innovation processes at industry and firm levels, encourage and promote environmental and sustainability efforts, streamline the cooperation of all key stakeholders, and facilitate re-definition of existing values,

meanings, structures and priorities. In this paper we build on these studies by conducting a systematic, fine-grained analysis of emergence and evolution of DTFI aiming to contribute to a better understanding of emergence *and* evolution of industries.

### **DTFI Case: Research Approach, Basic Findings**

To investigate the episodes and epochs in the emergence and evolution of DTFI we collected historical unobtrusive measures between 1945 and 2015 in the form of running records such as mass media and government records and episodic and private records such as sales, industrial and institutional records (Webb, Campbell, Schwartz, & Sechrest, 2000). We consulted a number of sources such as Business History Yearbooks, Industry case studies, National statistics, Global Association databases, Institutional reports, Private company reports and industry online news, yielding approximately 450 pages of unobtrusive data. We employed the well-established NVivo qualitative analysis software package to code, memo, analyse, and interpret the data (NVivo data analysis details are available upon request).

We identified three frames of reference to accurately code, classify and analyse the data: (1) macro, meso and micro levels: global, country, industry, company, process and strategy; (2) context level: DTFI's size, mission, location, knowledge, growth and structure; and (3) time level: evolution, epochs, and episodes. We employed events listing, critical events, and case dynamics matrixes as well as causal mapping (Miles & Huberman, 1994) to explore the data, especially explore what led to what, when, and why. Using these tools helped us map the chronological flow of critical events and turning points, identify main institutional players who enacted various changes in DTFI and in the textile sector internationally, understand how the quality of their decisions impacted the evolution of the industry, and explore the consequences or effects on DTFI evolution and metamorphoses. Appendix 1 provides a summary of major critical events in the evolution of DTFI and Appendix 2 maps causal links between various frames of reference and levels of analysis across and within evolution periods. The emerging

findings of the effects of late globalization on evolution and metamorphoses of DTFI are summarized in Table 1.

\*\*\* Table 1 about here \*\*\*

We borrow the MNE international evolution framework from Kutschker et al. (1977) to examine the evolution of DTFI; it consists of three ‘Es’: evolution, episodes and epochs. Our data analysis points to four epochs and six episodes that DTFI went through between 1945 and 2015 (Figure 1). The emerged *epochs* are: (I) *Changing production type*; (II) *Resisting relocating production*; (III) *Accelerated globalization*; and (IV) *Focusing on e-commerce*. The emerged *episodes* are: (1) *Abolishing protectionism*; (2) *In-house design*; (3) *Change from within*; (4) *Breaking-up global value chains*; (5) *Strategic outsourcing*; and (6) *Acquisition of global R&Ds and e-shops*.

\*\*\* Figure 1 about here \*\*\*

In the life of an industry, *evolution* represents “small variations” (Kutschker, Bäumle, & Schmid, 1977, p. 105) in macro, meso and micro levels of the industry over time and *episodes* indicate turning points or critical events. A critical event is an event that deviates significantly, either positively or negatively, from what is normal or expected (Edvardsson, 1992). A turning point refers to two points in time, i.e., for a turning point to exist, there should be a passage of sufficient time between the two points, making sure that the direction of the course (trajectory) has been changed either in direction or in nature (Abbott, 2006). According to Abbott (2006), a turning point is also a process that involves a course correction: it redirects the path, and requires certain strategies and choices. Industry *epochs* “...are characterized by a specific

pattern and an underlying idea which dominates the stream of ...activities for a certain period” (Kutschker, Bäurle, & Schmid, 1977, p. 106).

To conduct further in-depth analysis of each episode, we employ radar charts to display and discuss the observations of the industry variables: size, mission, location, knowledge, growth and structure (Figure 2). Size represents number of companies and number of workers in the industry. Mission indicates herein the primary purpose and focus of the industry. Location denotes relocating decisions mainly of the production. Knowledge represents knowledge accumulation and sophistication. Growth indicates industry revenue. Structure signifies institutional – regulatory, normative and cognitive – structural changes of the industry. The degree of change for a specific variable represents the effects of critical effects, turning points and relative decisions on that variable within each episode. Each chart displays a degree of change for a variable: the farther away a variable is from the centre of a radar chart, the higher is the degree of change of that variable.

\*\*\* Figure 2 about here \*\*\*

## **DTFI Case: Detailed Findings and Discussion**

### ***Epoch I: Changing Production Type***

The post-war economic optimism contributed to the transformation of textile and clothing industry worldwide. Fashion culture started to re-emerge in the form of a global demand for “ready-to-wear” clothing. To meet this demand for “ready-to-wear” clothing, textile and clothing companies had to rethink their ways of production and manufacturing, as well as acquire new knowledge of fashion design. Data suggest that protectionism dominated the course of activities and decisions during this period. The dilemma was whether to reinforce or abolish protectionism.

### *Episode 1: Abolishing Protectionism*

Danish Government abolished any protectionism to encourage demand-driven production and exporting of clothing products. Abolishing protectionism had an adverse effect on DTFI and its companies. On one side, abolishing protectionism made local companies vulnerable to global free trade competition. On the other, local companies not only were not ready to cope with international and global competitors, they were inefficient and at time resistant or reluctant to respond to new fashion trends and new challenges and requirements of international markets. Globalization trends indeed were forcing the sector to consider changing its mission from 'labour-intensive mass-production' to 'demand-driven production' and becoming more knowledge-intensive sector.

Embracing 'demand-driven production' was a trade-off between sacrificing the size of the sector and staying flexible against global competitors. This shift in the mission of the sector also demanded new professions from a local labour market: not just production-line workers, but also design specialists. Towards the end of this period, DTFI could be characterized as downsized sector with demand-driven mission that was in need for fashion design knowledge. Data suggest that there was disconnect or incongruity between governmental policies and sector companies' capabilities. This led to significant shrinkage of DTFI; those companies that continued their 'going concern' were preoccupied mainly with their survival trying to export on demand. Toward the end of this epoch, overall performance (growth) of the sector increased substantially.

### *Epoch II: Resisting Relocating Production*

This period is characterized by continuous shrinkage of DTFI. The reason for this mainly is twofold. On one side, globalization trends such as low-cost-labour arbitrage, exposure to global free trade and global economic recession made textile and clothing sectors worldwide remarkably smaller. On the other, Danish Government enacted protectionism policy in an

attempt to mitigate the trading threats from new, stronger competitor from Southern European countries, like Spain and Portugal. Data suggest that resistance to relocate production, notwithstanding global trends, dominated the course of activities and decisions during this period. Data analysis singles out two episodes that are related to this epoch. One episode reflects survival by shrinkage and in-house design; the other episode is about failure of protectionism and change from within.

### *Episode 2: In-house Design*

Danish Government protectionism policy was coupled with a sector-wide mission to keep the whole value-chain in-house, in the country, mainly to maintain the level of employment. The decision to keep companies' value-chains in-house was taken in spite of the fact that global economic recession changed public consumption toward cheaper clothing and that international competitors started relocating their production to low-cost countries. The intention was to balance this decision with manipulation of imports of clothing products from low-cost countries.

Such protectionism policy and the 'advice' to keep the whole value-chain in-house, however, created tensions among local companies and eventually led to the decrease of sector performance. Those companies that follow the policy and the advice had to downsize by laying off employees, whereas some even ceased trading – hence contributing further to the shrinkage of DTFI. Others decided to go against the established regulations and norms and commenced partial re-location of low-value parts of their value chains.

In fact, this resistance sparked the emergence of Danish MNEs in DTFI along the emergence of MNEs (initially) from Southern Europe. Another outcome of these tensions was that Danish companies started appreciating the idea of breaking down own value chains and creating instead global value chains while keeping value-added activities such as design in-house. By the end of this period, design knowledge had become a truly global commodity.

### *Episode 3: Change from within*

During this episode, low-cost production centres mushroomed in Eastern Europe, Latin America and South East Asia. Labour-intensive industries, incl., textile and clothing, were going truly global giving rise to numerous MNEs, encouraging re-location of production to low-cost countries as well as giving birth to the notion of ‘outsourcing’. ‘Fast-fashion’ culture was emerging demanding shorter lead-time from design to production to sales and thus challenging the way companies were organizing and managing their value chains.

The Association of Danish Employers responded to these global trends by initiating a strategic development project called "change from within" targeting Danish manufacturers. Key idea of this project was to compete through "automation" as an alternative to low-cost global competition. This project – that in a way was a revised protectionism policy - however failed to deliver expected results, especially to decrease lead-time and prices. This led to further shrinkage of the sector: companies had to lay off employees and in the middle of 1980 the level of workforce started to decrease again. In the end this revision of protectionism policy failed to offer cheaper products compared to those offered by Asian and Southern European manufacturers and eventually led to a decline of exporting.

A by-product of the revised protectionism policy was an increase of the level of outflow FDI that towards the end of the period exceeded dramatically the inflow of FDI. This tendency was caused by the decision of Danish textile and clothing companies to relocate their production the countries with location advantages and accessible global networks as well as to engage in subcontracting and outsourcing – phenomena that were just getting traction during this period.

It was interesting to observe – interesting for that period dominated by MNEs – that smaller companies were frontrunners in changing and adapting their business models and engaging way earlier than MNEs and without any regard for actual policies in relocation of production and outsourcing. The above movements prompted the Association of Danish

Employers to reformulate the sector development policy in 1987 and to recommend relocating and engaging in outsourcing. Towards the end of the period, the value of Danish exports increased, especially to Norway, Sweden, Finland, Germany and Great Britain, demonstrating the potential advantages from international and global integration.

### ***Epoch III: Accelerated globalization***

Data suggest that this epoch is characterized by accelerated globalization. End of the Cold War, fall of Berlin Wall, collapse of Soviet Union, radical reforms in China, Denmark joining EU and WTO are examples of major global trends that took place during this period and drove this break-up process. Opening up Eastern European market brought up numerous market opportunities as well as cheap labour arbitrage opportunities but also new competition. Radical reforms in China started making impact on its growth, witnessing an increase in exporting from China that threatened local clothing and textile companies. Two episodes mark this epoch: breaking-up global value chains and strategic outsourcing.

#### ***Episode 4: Breaking-up Global Value Chains***

The Danish Government eventually gave in resisting globalization and embraced globalization, accepting 'anti-protectionism' policy for the sector. Danish companies started breaking up their value chain and actively seek cost-efficient relocation of production, while keeping design and branding in house. Data suggest that Danish companies were successful in pursuing relocation and outsourcing strategies. Embracing globalization and responding to global trends by splitting up companies' value chains, offshoring, acquisitions and outsourcing contributed towards the enhancement of sector competitiveness and development of sector core value adding activities, such as 'in-house design'. Demand for knowledge in fashion design and shop in shop branding was increasing as well. During this period, Danish companies initiated the restructuring of their value chain strategies from CMT (Cut, Make and Trim) and OPT (Outward Processing Traffic) in 1980s to SOD (Sourcing from Own Design), putting more emphasis on high value add



activities such as design and branding. At the same time, data point to a number of casualties: companies with more than 600 employees were not able to adapt and reformulate their growth strategy – e.g., re-locate or outsource – and eventually ceased trading. It is important to mention that these same strategic activities led to further shrinkage of the sector in number of employees and restructuring of the sector.

#### *Episode 5: Strategic Outsourcing*

In this period the role of China in global trade continued increasing, including an attractive import policies that had a tremendous impact on manufacturing sectors worldwide. Toward the middle of this period Bulgaria, Romania and Croatia joined EU. This allowed Danish companies to access new trading and production partners as an alternative to South European expensive partners. Another global trend that had a negative impact not only on DTFI was the financial crisis in 2008.

Danish companies took full advantage of these new offshoring and outsourcing opportunities. Such wilful, determined strategic outlook towards outsourcing contributed to further shrinkage of the sector as many sector companies moved production abroad; some even change their business model from production just to design, sales and marketing. Also during this period consolidation of the sector took place: larger companies started acquiring smaller companies that had specific knowledge, high-tech or know-how capabilities.

Gradually the core mission of the sector moved towards ‘intelligent textile’ concept that included primarily wearable electronics as well as new materials, textures and surfaces. This change of sector identify to high-tech fabric required new knowledge in design, R&D, and production. This led to a launch of new study programs in Danish Higher Education sector that were training future employees for DTFI sector. This new mission contributed to a split between textiles manufacturing that was concerned with production of high tech fabrics and selling it to

B2B niche markets and clothing production that redirected clothing value chains toward fast fashion market trends. It could be argued that in this period DTFI became truly global.

#### ***Epoch IV: Focus on E-Commerce***

Focus on e-commerce characterizes this epoch's course of activities and decisions. During this epoch, new global trends were emerging and getting traction quite rapidly, namely social media, e-commerce and on-line shopping. Thanks to these trends, the number of companies in the fashion-sector increased; however, an increase in costs of raw material had a negative impact on companies from the textile sub-sector – several manufacturers ceased their trading due to this trend. At the same time, traditional global trends were present in this epoch as well, such as rise of labour and material costs in China and India which made DTFI companies to search for new low-cost locations to relocate or outsource such as Bangladesh, Vietnam, Cambodia, Egypt, and Myanmar. The episode related to this epoch is about acquiring global R&D centres, global brands and e-shops.

#### ***Episode 6: Acquisition of Global R&Ds and E-Shops***

SMEs from the fashion sub-sector were quicker in adopting e-commerce compared to their counterparts from the textile sub-sector. To keep up with global trends, policy makers changed the name of the sector from 'Textile and Clothing' to 'Textile and Fashion'. New education programs were launched to support this new identity of the sector. Given the new identity or mission of the sector, i.e., intelligent textile or high-tech fabric, textile companies were searching globally for companies that possessed respective knowledge and capabilities, especially knowledge in latest R&D, sales and marketing for the purpose of acquiring such companies or entering strategic alliances. This strategy was also aimed at ensuring quality control and production costs at the foreign partner premises. At the same time fashion companies during this period pursued aggressively acquisition strategy in Europe by acquiring European fashion brands and e-shops. These acquisition strategies inter alia were aimed to deter

entry of competitors from Asian on-line shops. DTFI witnessed slow but steady increase in size during this period and was becoming an e-sector taking advantage of digitalization trend as well as new modern infrastructure and knowledge built and created.

## **Concluding Observations**

### ***Late Globalization: Key Conclusions from DTFI Case***

The data suggest that DTFI is a late globalizer. It emerges that government policies were instrumental in shaping the development and growth of the sector. Especially protectionist policies held back DTFI from globalizing earlier. DTFI started to globalize in early 1990s by relocation and offshoring of production and in early 2000s actively pursued strategic outsourcing.

DTFI is largely concentrated geographically around the big Danish cities. The Copenhagen and Jutland geographies – historically separated by bodies of water (and only recently connected by bridges and tunnels) – also split up the two main sectors in DTFI, reflecting a symbolic manifestation of the diversity of the business. The evolution of the industry has led to a divided and separated Textile and Fashion industries, a rift that was only healed in 2012 by changing the label of industry to DTFI (Jensen & Poulsen, 2013). Currently, In Jutland the industry exists around cities like Herning, Ikast, and Brande – which host mostly large Textile manufacturers and clothing companies (Christensen, 2010). The other great part of the industry, the high-value fashion design part, however, is concentrated around Copenhagen, mainly composed of design-driven SMEs. The other large areas are concentrated around Ringkøbing as well as Vejle, which belong to the Danish traditional era within the textile production sites. Furthermore, two major design colleges are located at Kolding School of Design and TEKO design school in Jutland, so that about 10% of the design companies are located in each area; and there is Aarhus – the largest city in Jutland – that also counts for approximately 10% of the total (Christensen, 2010).

### *Pre-Epoch I*

Although the first cotton manufacturing company, publicly known as Manchester Factory, was established in 1779 outside Copenhagen, the most significant early step in the mechanization of textile production was I.C. Modeweg, which was founded as a cloth (textile) manufacturer in the centre of Copenhagen in 1809, which, later, in 1831, relocated to Brede, in the countryside north of Copenhagen.

Between 1840 and 1865, modern industry gained footing in Denmark, and in 1846 Modewegs cloth mill in Brede was the first to adopt multiple new technologies. In 1892, a spinning plant was established in Vejle on the east coast of Jutland, using ring spinning machines for the first time in Denmark. Another spinning plant was established in the same town a few years later, and together with some major cotton weaving plants, and other plants were established in the following years, among them a large one in Valby, Copenhagen (Christensen, 2010).

### *Epoch I*

There is no concrete evidence indicating the relocation of the industry within Denmark during Epoch I, as changes in production type led to inevitable changes in the vulnerable older Danish textile and clothing sector. At the start of Epoch I, post-war economic optimism and emergence of fashion culture were the main legacy for the industry. Production by demand dominated the coping strategy to survive. Several manufactures that held large single-production sites were forced to bring up-, mid- and downstream activities to Denmark (Spandet-Møller, 2011).

### *Epoch II*

New countries were becoming active textile producers and exporters, able to compete on the world market, based on their comparatively lower wages. In Herning-Ikast-Brande district, specifically, employment continued to increase. Thus, the area experienced considerable absolute and relative increases in employment levels up to the early 1970s. In the 1980s and

1990s, a large proportion of the cluster's manufacturing activities were relocated to low-cost countries in Europe. Generally, the area of Herning-Ikast-Brande became recognised in the international and national literature on company clusters, of both a theoretical and an empirical nature, describing it as a well-established cluster within the textiles and clothing sector (EMCC, 2008).

At the same time, Egetæpper, a successful carpet factory, was among the first in Europe to invest in computer-controlled dyeing technology, in this region. The last surviving major cloth mill, Kjærs Mølle in Ålborg, however, gave up producing textiles for wearable clothing in favour of high quality furniture fabrics, under the trade name of Gabriel. In the 1980s, also, this concentration was particularly important to the companies located in the cluster, as it attracted many potential customers to the area (Laursen, Hansen, & Andersen, 2002).

### *Epoch III*

This development signifies the first wave of change in terms of the location of activities in the Industry in Denmark, mainly from the Copenhagen area of the Danish island of Zealand in eastern Denmark to the Jutland area in western Denmark, which includes the Herning-Ikast-Brande district (EMCC, 2008).

### *Epoch IV*

With the emergence of e-commerce in the Danish fashion sector 2010, many Danish SMEs attempted to improve core activities like sales and marketing using internet. In this regard, divesting small markets abroad and increasing focus on local market became inevitable. In doing so, the location of DTFI started to be driven by design trends (Spandet-Møller, 2011). Also, in April 2013, the World Trade Organization (WTO) dealt officially with the subject of e-commerce (Jensen & Poulsen, 2013). It was a major reason for the larger companies located in the centre of Jutland like Bestseller, BTX Group, and DK Companies to start producing trend-driven fashion. The Copenhagen area – home to mainly small- to medium-sized fashion

companies – engaged with design-driven fashion, often trend-setting rather than driven by trends. In Denmark specifically, small- and medium-sized enterprises (SMEs) made up more than 30% of export in the early 2010s (Christensen, 2010), and the Copenhagen Fashion Council was established in April 2010 with the purpose of ensuring an even stronger Copenhagen Fashion Week for the future. Interestingly, the number of companies in fashion industry in Zealand (Copenhagen region) increased in 2012, even as the overall DTFI firm numbers kept declining (statistikbanken, 2015).

### ***Late Globalization: Research Challenges Ahead***

While this is just a longitudinal one-country-and-industry case study of late globalization, it already points to a number of key factors that influence the lateness (or earliness) of globalization: government policies toward domestic and foreign players in an industry, global competition that shapes and continually reshapes (cost as well as quality-driven) location of key value chain activities (and the concomitant global distribution of core competencies and skills), and the growing role of information technologies that enable globally-dispersed value chains to function in cohesive and unified ways. A large palette of such studies needs to be created – varying the industrial, geo-national and temporal contexts – so that patterns can be discovered from the juxtapositions of multiple specific sets of insights.

In specific terms, we hope the general concept of ‘late globalization’ introduced in the early part of this paper and the detailed cased study of DTFI in the later part set a stage for further work of the following types:

- (a) Industry emergence and evolution studies, going forward into a future where ‘globalization’ itself is being problematized, bringing in early/late aspects of globalization in their discursive frames.

- (b) Theorizing and theory-building work getting done and being disseminated, employing cross-disciplinary approaches, about the multiple aspects of the early/late aspects of globalization observed the world over.

### ***Late Globalization: Some Final Thoughts***

Of course, these are just some of the major factors, and myriad specific factors were at work in the DTFI case. The situation circa 2015 in Denmark clearly shows intersections of globalization and microgeographies. The trend-driven larger firms in Denmark are under intense cost-competitive pressure and likely to shrink, affecting Jutland region. The design-driven, trend-setting smaller firms, mainly clustered in Copenhagen-Zealand region, have strong future prospects, boosting not just their own fortunes but also the larger art-culture scene in vibrant Copenhagen. As we continue our research exploration of late globalization through other countries and industries, we hope to uncover and conceptually reinforce these and other building blocks for a theory of late globalization.

We also believe strongly that – in terms of gaining deeper insights into the phenomena of late globalization, and cognate phenomena like de-internationalization (Anon for review) and de-globalization – the theoretic-analytic levels need to oscillate across macro/meso/micro levels as well as across substantive-theory and meta-theoretical levels. We should keep in mind that as humans begins to transcend the limits of planet Earth, the denotative as well as connotative aspects of the term ‘globalization’ will begin to crumble. This is already of course evident in science fiction films. Before reality reaches such sci-fi stages, the work on late globalization issues needs to intensify – to create a good conceptual foundation for the post-global studies that are surely around the corner.

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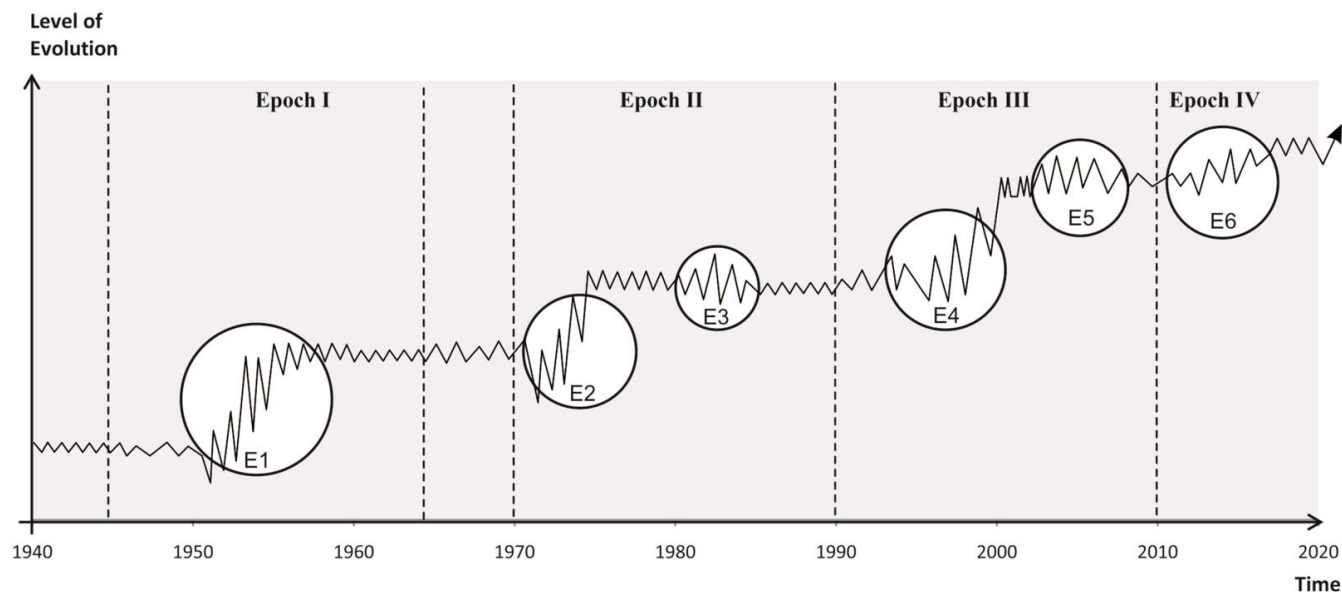
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**Table 1: Effects of late globalization on evolution of DTFI**

		1945-70 The legacy of WWII and fashion (re)emerging	1971-80 Survival by shrinkage and in-house design	1981-90 Failure of protectionism and change from within	1991-2000 Accelerated globalization via production offshoring	2001-2010 Willful globalization via strategic outsourcing	2011-2015 Acquisition of global R&Ds and e-shops	
Critical events/ Turning points	Global trends	Economic optimism after the end of WW II	Denmark joins EEC	Emergence of low-cost Eastern Europe and Asian products worldwide	Denmark joins WTO and GATT	China joins WTO	Price increase for textile and clothing raw material	E-commerce on WTO development agenda
		Emergence of fashion trend in clothing industry (ready to wear)	European Economic recession	Quick trend of fast-fashion culture	Denmark joins EU	2008 world economic recession	Emergence of e-commerce worldwide	Increase of wages in China
			Emergence of low-cost manufactures worldwide		Opening up Eastern Europe			
Strategies and choices		Demand-driven Production	In-house design	Change from within	Production offshoring	Strategic outsourcing	Acquisition of global R&D and e-shops	
HOW/WHO? Institutional level	Government and Textile institutions (Regulative)	Abolish protectionism	Protectionism	Revised protectionism	Anti-Protectionism	Relationship with China	Fashion life education	Online shopping policies
		Free trade regulations	MFA regulation- trade restriction	Change from within	Policy to invest in Eastern Europe	Enhance education system in design and branding	Change sector name to "Textile and Fashion"	Acquisition of e-shops
			TEX anti-relocation advice	Automation			Policy for alternative Asian low-cost economies for production	Acquisition of global high-tech suppliers in textile sector
	Companies (Normative)	Export of clothing products	Fully-fledge value chain strategy at home in MNEs	Growing number of MNEs in Sothern Europe	Growing number of MNEs in Eastern EU	Growing number of MNEs in China	FDIs in acquisition of European shops & brands	Global CRM and e-marketing functions
		Process and Strategy (Cognitive)	Demand-driven production	In-house design & relocation of low-stream production in mid-70s	Danish design approach	Offshoring production	Intelligent textile as value added activity at home	Partnership with high-tech suppliers in textile sector
	Relocation to Sothern EU production sites in late 80s				Acquisition of low-cost production sites	Outsourcing labor-intensive processes		
					Acquisition of fast fashion brands			
Key Development Policy		Change in type of production	Resistance to re-locate	Delay in re-location of production	Relocation of production	Breaking-up the value chains globally	Focusing on European sales and marketing developments and adoption of e-commerce	
WHAT?	Effects on the sector							
	Size	Downsizing	Remarkable Downsizing	Growth	Downsizing	Downsizing	Growth by the number of SMEs in fashion business	
	Mission	Demand driven	N.A	Cheap export	Cheap export -branding	Design as value - B2B era	Branding of e-shops	
	Location	N.A	Somewhat relocation	Re-location by offshoring	Re-location by outsourcing	Re-location by partnership	Re-location by Asian alternatives	
	Knowledge	Increase	Increase	N.A	Design knowledge increase	Hi-tech knowledge/design increase	Hi-tech knowledge/design increase; knowledge compromised in partnerships	
	Economy	Growth	Decline	Remarkable Growth	Steady growth	Unsteady growth	Stability and steady Growth	
	Structure (Subsectors)	No change	No change	Fashion	Fast fashion	New, B2B niche in hi-tech fabric	Clothing sector replaced by fashion and embraced e-commerce	

**Figure 1: Evolution, episodes and epochs of DTFI**



Note:

Industry evolution (zigzag line) represents small variations in macro, meso and micro levels of the industry over time.

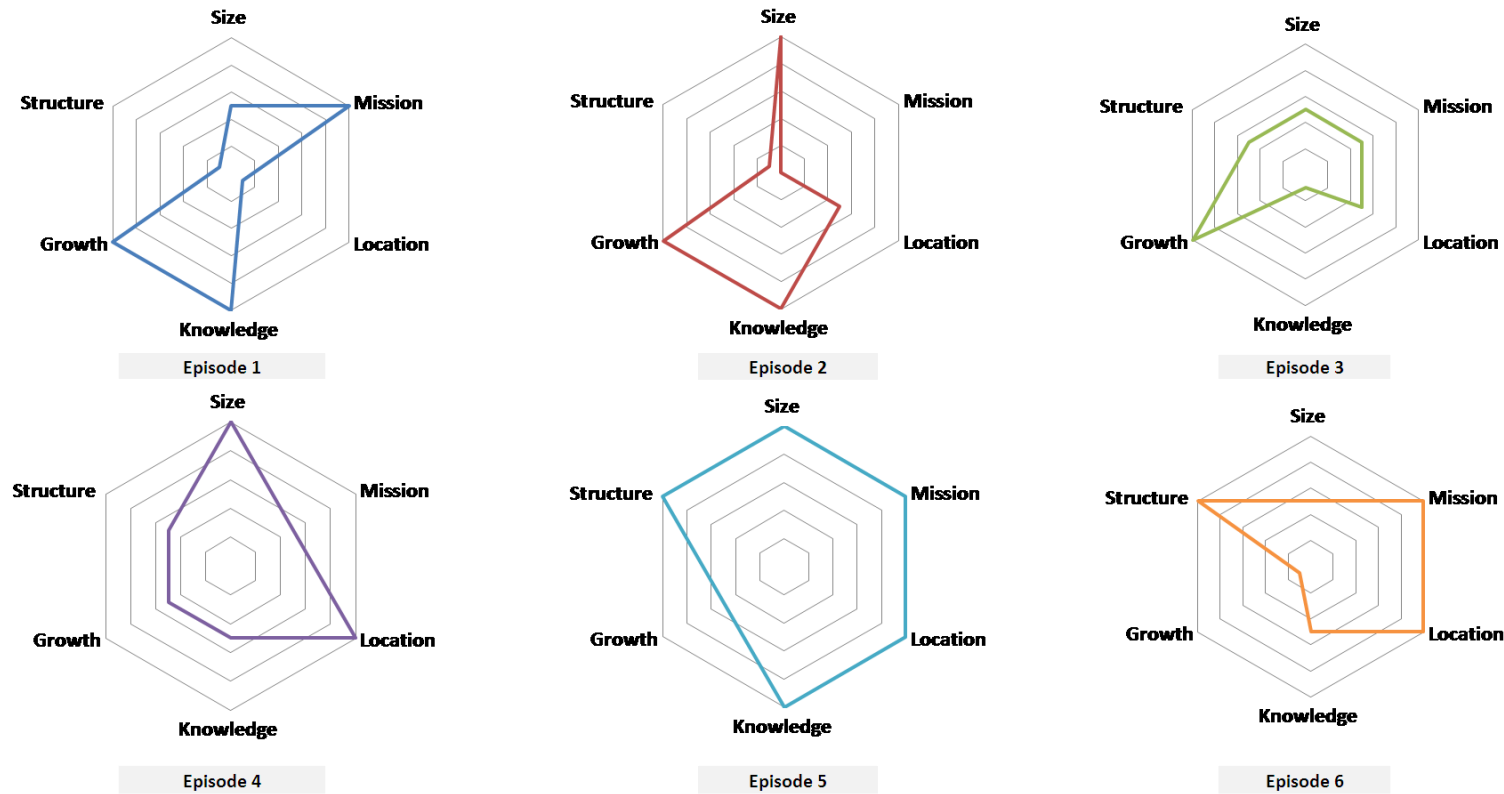
Industry epochs are characterized by a specific pattern and an underlying idea which dominates the stream of activities for a certain period.

Industry episodes mark critical events or turning points in the life of the industry.

Epoch I: Changing production type; Epoch II: Resisting relocating production; Epoch III: Accelerated globalization; Epoch IV: Focusing on e-commerce.

E1: Abolishing protectionism; E2: In-house design; E3: Change from within; E4: Breaking-up global value chains; E5: Strategic outsourcing; E6: Acquisition of global R&Ds and e-shops.

**Figure 2: Evolution of DTFI variables**



**Note:**  
The farther away a variable is from the center of a radar chart, the higher is the degree of change of that variable.

## Appendix 1: Critical event matrix

	Global	Country/Industry	Company/Process/Strategy
<b>1945-1970</b>	Post WWII economic optimism/boom Emergence of “Fashion Culture” followed by “ready to wear” trend	Protectionism in Denmark abolished Emergence of Danish welfare state Emergence of free trade agreements Publication of DFTI sector journal Price competition rises	Large and oldest Danish manufacturers with single production line closed down Decline of traditional production of fabrics Demand-driven production emerges Propensity toward export on demand
<b>1971-1980</b>	Global free trade regulations established Western economic recession unfolds South Europe, Latin America and South East Asia join clothing market Low- cost labor arbitrage emerges Lead-time from design to production shortened Multi-Fiber Arrangement sets boundaries for global textile exports	Demand for consumer goods declines Denmark joins ECC ECC members and Multi-Fiber Arrangement imposed import quotas Change in public consumption toward synthetic fabrics Relocation of labor- intensive industries to low-cost countries takes place Increased demand for design knowledge in production Danish “In-House” manufacturing policy implemented Textile and clothing industry shrinks Danish Clothing Association and Danish technological textile institute fight for protectionism Emergence of low-cost production opportunities in Southern Europe	Investing in computer-controlled dyeing technology (first in Europe by Egetæpper A/S) Switching from production of textile for clothing toward high quality furniture fabrics (Gabriel) Danish MNEs emerge Beginning to relocate low-stream value chain activities to Southern Europe and keep value added activities like design in Denmark
<b>1981-1990</b>	Price liberalization as part of European integration	Customer demand for design increases Emergence of relocation of mid-stream production to low cost countries	Brandtex started offshoring to Poland Vanggard (>600 employees) ceased trading

	<b>Global</b>	<b>Country/Industry</b>	<b>Company/Process/Strategy</b>
	Regulations set to support free flow of capital in ECC Trend of “fast- fashion” culture accelerates Collapse of Berlin Wall Increased demand for moving production and outsourcing to Eastern Europe, Latin America and South East Asia	Outsourcing trend gets traction Fashion cloths became available in supermarkets “Change from within” policy initiated by Association of Danish Employers Automation introduced to fight low-cost global competition Danish Clothing Association revised protectionism policy Moving most of sewing abroad	Growing number of Danish MNEs offshore to Southern and Central Europe Setting High expectations for lead-time from design to production Rise of OPT (Outward Processing Traffic) strategy Adopting innovation-driven branding strategies and individual design
<b>1991-2000</b>	European Union established; launch of euro Denmark joined EU and WTO Cold War ends Soviet Union collapses; opening of Eastern Europe Dot-com Bubble Chain’s rapid economic growth began Trade liberalization in India	Anti-protectionism sentiments rise Outsourcing takes traction and reshapes sector Integration of Denmark clothing into GATT/WTP Increased pressure from fast fashion Globalizing value chain activities became main stream Growth Fund created Danish companies preferred free trade	Axcel, newly founded company, started investing in fashion brands Emergence of shop-in-shop opportunities ‘Cut, Make and Trim’ and ‘Sourcing form Own Design’ shaped offshoring and value chain globalization Fully-integrated value chain strategy failed
<b>2001-2010</b>	Financial crisis; EU recession China joined WTO/Trade liberalization in China Emergence of Internationalization of design education Eastern European countries join EU Multi Fibre Arrangements expired	Increased demand for fashion apparels such as shoes and jewelry Growing Danish production in China Emergence of new material such as intelligent textiles Copenhagen becomes capital of innovation-driven fashion Increased concerns about losing production know-how due to outsourcing	Increased success in subcontracting production Outsourcing of production becomes part of growth strategies Continued focus on high-value adding activities Partnership strategy Acquiring new non-Danish brands

Global		Country/Industry	Company/Process/Strategy
2011-2015		Rise of equity funds in DTFI Initial wave of Danish e-commerce DTFI shifted focus away from production towards high-value adding and knowledge intensive activities, such as design and branding	Main internationalization destinations were China, South East Asia, US, Vietnam, South Africa SMEs were contributing more than 30% in exports
	Recovery of German, Swedish and Norwegian economies Chinese companies move toward value-added products charging premium prices India increased price pressure on cotton Global increase of price for raw materials China: Manufacturing base is reduced following global recession; Increased competition E-commerce in WTO spotlight Asia's e-commerce growth rates in double digits Opportunities open up in developing economies E-commerce becomes mainstream	Women's clothing was on top in online shopping New record in online spending: 55 billion DKK Higher education institutions offer a range of short-cycle study programs in design DTFI reached 30 billion DKK annual turnover becoming the 4th largest exporter Industry changes its name to 'Textile and Fashion' Government recommendations to outsource to Bangladesh, Vietnam, Cambodia, Egypt, and Myanmar Developing online shopping regulations Increased demand for high-tech products	Globalization via acquisitions accelerates aiming to develop architecture & design brands in Europe and Asia in fabric and textile sector Acquisitions of high-tech suppliers in textile sector Acquisition of e-shops Clothing companies focus at home on sales and marketing



## Appendix 2: Causal mapping

